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# Topic and focus

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Topic and focus have to do with information structuring, that is, presentation of information as old and new. Successful communication requires a balanced presentation of old and new information: too much new information can make it hard to establish the connection with previous discourse and leads to incoherence. Every new sentence in a discourse connects to the previously established context, and, at the same time, adds a new piece of information. Depending on what is new in a given context, the same piece of information can be presented in different ways.

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## 1. *Language and information structuring*

Languages in general use a variety of ways to encode given and new information in the grammar. A language like English often uses **phonological** means like stress. Writing intonational prominence in capitals, we observe for instance, that (1b) is most likely an answer to the question in (1a), whereas (2b) will rather be an answer to (2a):

- (1) a. What does Susan want to drink?  
b. Susan wants BEER
- (2) a. Who wants beer?  
b. SUSAN wants beer

There is no syntactic or semantic difference between (1b) and (2b). Still, they would clearly not be used in the same context: (1b) is not felicitous as an answer to the question in (2a), and similarly, (2b) is not an appropriate answer to the question in (1a). The reason is not so much a difference in truth conditions as in **update** conditions. The two sentences update the context in different ways, because they do not have identical information structuring properties. Note that this view of information structuring makes it essentially a pragmatic phenomenon, because we take into account the context in which the sentence is interpreted. As we will see later, information structuring can have semantic, i.e. truth-conditional effects as well.

English also uses **syntactic structure**, for instance word order reflects a difference in updating conditions in examples like (3) and (4):

- (3) a. When did Jane leave?  
       b. Jane left at six o'clock
- (4) a. What happened at six o'clock?  
       b. At six o'clock, Jane left

(3b) is the typical answer to a question like (3a). It is much more unlikely that a speaker will utter (4b) in this context (unless (3a) is used like an echo question). On the other hand, (4b) is typically an answer to question (4a), although (3a), with a different intonation pattern, would also be felicitous in this context. The construction in (4b) is often described as topicalization: the sentence-initial time adverbial provides the temporal frame for the main clause (de Swart 1999). What we see here is roughly a correspondence between left-right processing and given-new information. Of course this is not true in general, we only need to look back at (1) and (2) to remember that information structuring need not correspond with left-right order.

Aside from intonational prominence and playing around with word order, English can also express information structuring by means of specific constructions, such as cleft sentences:

- (5) a. It is beer Susan wants  
       b. It is Susan who wants beer

Clefts stress new or particularly relevant information in a given context, and the rest of the sentence is presupposed to be known.

Other languages go even further in the expression of information patterns in the syntax, and have special slots in the tree where topicalized or focused information goes. Examples are Hungarian, Czech, Mayan languages and Catalan. We will come back to Czech, Mayan languages, and Catalan below, so just a few remarks on Hungarian here. Hungarian topic-focus structure is extensively discussed by Kiss (1981), Szabolcsi (1981), and others. Hungarian is a free word order language, with special slots for topic and focus before the main sentence:  $[[T][F][S^0]]$ . Kiss assumes that  $T$  and  $F$  are generated empty. Material from  $S^0$  can be moved there, leaving a trace behind. If  $F$  is empty, the main stress falls on the finite verb in  $S^0$ . If  $F$  is not empty, stress is on the first major category in  $F$ . Focus is claimed to be exhaustive, that is, Mary and no one else saw Peter in (6):

- (6)  $[_F\text{Mária}]$  látta Pétert  
       Maria saw Peter-ACC  
       'It was Maria (and no one else) who saw Peter'

It is also observed that a constituent modified by a negative (interrogative, optative, etc.) operator must occupy the  $F$  position, for instance:

- (7) a. [<sub>T</sub>e][<sub>F</sub> Ném PÉTER] sétál Máriával  
           not Peter walks Maria-with  
           'It is not Peter who walks with Maria'  
   b. \* [<sub>T</sub> Ném Péter][<sub>F</sub> MÁRIÁVAL] sétál  
           not Peter Maria-with walks  
   c. [<sub>T</sub>Máriával][<sub>F</sub>e] SÉTÁL nem Péter  
           Maria-with walks 'not Peter

What these examples show is that Hungarian exploits syntactic structure to present the situation from different perspectives.

Although focus in Hungarian (and in Mayan languages, see Aissen 1992, and below) is clearly interpreted exhaustively, it is unclear whether this is a general meaning effect related to focus. If focus is an exhaustiveness operator in a language like English as well, we would expect sentences like (8a) and (8b) to be equivalent, but intuitively, that does not seem to be the case:

- (8) a. SUSAN is in Groningen  
       b. Only SUSAN is in Groningen

For instance, one could utter (8a) as a reason for a visit to Groningen, but (8b) does not seem quite felicitous in such a context. This suggests an interpretation of (8a) in which it is relevant to mention Susan, without excluding that there are other (interesting) people in Groningen as well. In other cases, a bare focus construction is grammatical and informative whereas an exhaustiveness claim does not make sense, as in:

- (9) a. EVERYONE likes Susan  
       b. ??Only EVERYONE likes Susan

It is well-known that *only* does not associate with universal quantifiers like *everyone* (cf. Bonomi & Casalegno 1993 for discussion). It is unclear how to interpret exhaustiveness in such contexts. We conclude that exhaustiveness is a relevant notion in the study of focus, but that it is subject to cross-linguistic variation, and that exhaustivity is limited to expressions with particular semantic properties (such as entity or group denoting NPs rather than truly quantificational NPs).

A third option for languages to encode information structure is to use *morphological* markers. Japanese is a good example, similar data are available for Korean (see Kim 1985 for discussion). According to Kuno (1972) and others, the role of *ga* and *wa* in communication is to indicate the status of the information given by the relevant NPs. *Ga* is a marker that indicates that the subject represents new, unpredictable information. This can lead to either a neutral description or to an exhaustive listing reading. *Wa* on the other hand is used as theme or for contrast, and is either

anaphoric or generic. Kuno relates the old/new information distinction to focus/presupposition. For example *wa*:

- (10) a. Kuzira wa honnyuu-doobutu desu  
           whale *wa* mammal               is  
           'A whale is a mammal.'
- b. John wa watakusi no tomodati desu  
           John *wa* I                       's friend    is  
           'John is my friend.'
- c. #Ame wa hutte imasu  
           rain *wa* falling is  
           'It is raining.'

In (10a) *wa* is used with a generic subject, which counts as old information. In (10b) *John* is treated anaphorically: he is a familiar individual. Example (10c) is strange, because one would expect the information that rain is falling to be a neutral description. The sentence would only be acceptable in a larger context in which rain is contrasted with something else, e.g. 'rain is falling, but not snow'. An example with *ga*:

- (11)       John *ga* kimasita  
               John *ga* came

The use of *ga* here is compatible with an interpretation of the sentence as either a neutral description (It is a fact that John came) or as an exhaustive listing reading (John and only John came). Not everyone accepts Kuno's claim about the role of *ga* in information structure. A weaker claim would be to analyze *ga* as a simple subject marker without any claim about it providing 'new' information. It should be added that Japanese also uses intonational prominence to mark focus.

We conclude that there is quite some cross-linguistic variation in the expression of information structure, and it is very likely that the distinctions languages make partially overlap, without them being exactly the same. For instance, focus in Hungarian corresponds with exhaustive listing, but the *ga* marker in Japanese can either induce exhaustive listing, or a neutral description interpretation. More indepth case studies of individual languages and comparative analyses are needed to flesh this out in more detail.

The next problem in the study of information structuring concerns the variety of notions around in the literature to account for the distinctions between 'given' and 'new'.



## 2. Theories on topic and focus

As already pointed out with respect to the realization of information structuring in different languages, the notions appealed to in the explanation of linguistic phenomena overlap, but are not exactly the same. The main distinctions drawn in the literature are the following:

- theme-rheme
- topic-comment
- topic-focus
- focus-background

In this section, we will discuss some of the proposals made in the literature concerning these distinctions, and some relations between them. See also Vallduví (1990) for an overview of the literature.

### 2.1. Theme-rheme

An important reference in the literature on theme-rheme is Halliday (1967). Halliday assumes that the sequence of elements in the clause represents thematic ordering, with theme being the constituent in clause-initial position and rheme being the rest. Halliday distinguishes between theme-rheme structure and information structure.

Information units are realized as tone groups, and although they correspond with clauses in the unmarked case, they relate to the presentation of information as old or new rather than to grammatical (syntactic) structure as such. Information units use phonological means to select certain elements as focus, or points of prominence. What is focal is new information, not in the sense that it cannot have been previously mentioned (although it is often the case that it has not been), but in the sense that the speaker presents it as not being recoverable from the preceding discourse.

The functions **given** and **new** are thus not the same as those of **theme** and **rheme**. But there is a relationship between them, such that in the unmarked case, the focus of information will fall on something other than the theme. It will fall at least within the rheme, though not necessarily extending over the whole of it. Note that Halliday avoids the topic-comment distinction. He finds this terminology confusing, because it is used in different ways. **Topic** is used meaning both **given** and **theme**, which are distinct functions in his view. However, Halliday's use of theme is very close to an interpretation of topic in terms of aboutness. He points out that given information is 'what I was talking about before', whereas theme means 'what I am talking about now'. With the theme being 'what is being talked about', it is really the 'point of departure for the clause as a

message'. The main difference between Halliday's theme-rheme structure and the topic-comment terminology (with topic being used in the sense of aboutness) is the status of these notions in linguistic theory. Halliday's theme-rheme structure is grounded in the syntax: it is always the left-most constituent of the clause. Reinhart (1982) explicitly claims topics to be pragmatic. Although the sentence-initial position is the unmarked position for topics, topichood is not strictly syntactically defined. In fact, she gives examples in which the topic is not in sentence-initial position (see below).

## 2.2. *Topic-comment*

As pointed out by Halliday, the notion of topic is used in different ways in the literature. We will base our views here on Reinhart's (1982) paper. Reinhart argues that sentence topics are defined in terms of pragmatic aboutness, which makes topichood essentially a pragmatic phenomenon. Sentence topics must correspond to a (topic) expression in the sentence. Discourse topics are topics of larger units and can be more abstract. If a text is understood as being about a certain proposition, or a certain discourse entity, this is the topic of the text. In this paper, we will restrict ourselves to the notion of sentence topic.

Topichood is not anchored to a particular syntactic position. A sentence like (12) can have either Max or Rosa as a topic:

- (12)        Max saw Rosa yesterday

Using a pronoun instead of a full NP would make this even clearer.

- (13)    a.    He saw Rosa yesterday  
           b.    Max saw her yesterday

There is certainly a general preference to make the subject or the left-most constituent the topic. Insofar as topics are indeed old information, this tendency may be viewed as iconic: what is uttered first in a sentence will come earlier, and thus be **older**, than what is uttered afterwards (Haiman 1978). However, in Reinhart's view, topics do not necessarily give old information, so she does not appeal to iconicity or syntactic structure. In fact, as the example in (12) shows, topics may, but need not be in sentence-initial position.

Reinhart relates her view of topics to Strawson's (1964) analysis of definite descriptions. Strawson observes that presupposition failure arises when the NP is a topic, as in (14a), but the sentence is simply false when the NP is part of the predicate as in (14b):

- (14) a. The King of France visited the exhibition yesterday  
 b. The exhibition was visited by the King of France yesterday

The difference arises because (14b) can be verified by checking the list of people who visited the exhibition. Since we won't find the King of France among them, we know that the sentence is false. The referentially failing expression is **absorbed** into the predicate. (14a) on the other hand, is unfelicitous, because the King of France is the topic of the sentence. We should therefore be able to check claims made about him, such as him visiting the exhibition yesterday. Given that there is no referent for the definite description, we cannot check the list of the person's actions, though. Since the sentence makes no sense if there is no one to make a statement about, we end up with a truth-value gap, rather than falsity.

Reinhart argues that topichood cannot be described in terms of old information, because that would make it the complement of new information (which she calls **focus**). Describing old information is not sufficient for an expression to be the topic of the sentence, because not all old information is part of the topic (which makes this notion of **topic** different from the notion of **topic** in the Prague School, see below). In fact, encoding old information is not even a necessary condition for an expression to be the topic. An example borrowed from Krifka (1991) makes this clear:

- (15) a. What do you know about John's sisters?  
 b. [John's [eldest]<sub>F</sub> sister]<sub>T</sub> is very nice

(15b) predicates something of John's eldest sister, which gives us the topic of the sentence. However, only part of the topic is really old information in this context. The new information is that we talk about the eldest one of John's sisters. According to Krifka, the focus selects alternative topics the speaker could have commented upon. Examples of entirely new topics are given by constructions known as left-dislocation:

- (16) This guy, he tells me he wants a job in my firm

NPs in left-dislocated position are structurally marked topics: the sentence is used to assert something about its referent. This does not exclude the possibility that *this guy* in (16) introduces a new discourse referent we have not been talking about before. In fact, as Keenan-Ochs & Schieffelin (1976) point out, such constructions show up most often in an environment in which the referent does not appear in the immediately prior discourse, or is otherwise not currently in the foreground. In producing a left-dislocated construction, the speaker introduces or re-introduces a discourse referent, which is made the center of attention. Such **introducing** topics combine new information with the definition of an NP as the topic of the sentence.



They are called **shifted** topics, whereas the topics in examples like (13) are called **continuing** topics. Typically, shifted topics are full NPs, whereas continuing topics may also be given by pronouns.

Aissen (1992) relates the two kinds of topics to different structural positions in Mayan languages like Tzotzil and Tz'utujil. Aissen assumes that these languages are basically VOS, and have a VP-internal subject. However, there is quite some freedom in word order, and movement is related to discourse functions. In particular, there are special positions for focus and topic to the left of the verb. Aissen distinguishes two topic positions, one internal and one external to the CP. The shifted topics in Tzotzil are external to the CP, they constitute separate intonational phrases, and they do not occur in embedded clauses. The external topic need not be linked to anything in the following clause, as long as it provides the **setting** for the assertion:

- (17) A li vo'ot-e ch'e, ta j-chi'in jbatik! xi la  
 TOP DET you-ENC then ASP accompany each.other said CL  
 "As for you, we'll go together," he said'

Topics, but not foci in Tzotzil are usually preceded by the particle *a*. Topics are almost always marked with the definite determiner, and they are always closed by an enclitic *-e*, while foci never are. The topic-marked *li vo'ote* 'you' bears no syntactic relation in the clause — both subject and direct object are first-person plural (inclusive). Thus the topic cannot have been moved from the clause, since there is no place it could have come from. The Tzotzil example in (17) is thus close to the English one in (16).

Aside from the possibility of having such external topics, Tz'utujil also has an internal topic, which is in SpecCP, according to Aissen. These topics are not separated from the main clause by a pause, and they do occur in embedded clauses. The main difference in discourse function is that internal topics in Tz'utujil refer to the continuing topic in a discourse. For instance:

- (18) a. Ja k'a rme'al x-u-køj pa xajoj xin Tukun  
 the PART his.daughter ASP-enter in dance of Tecun  
 'He entered his daughter in the dance of Tecun'  
 b. y ja rme'al x-ok-i Malincha  
 and the his.daughter ASP-play-IV Malincha  
 'And the daughter played the part of the Malincha'

(18a) establishes *the daughter* as a new topic, using the particle *ka'ar* associated with shifted topics. But the NP referring to the daughter is again in topic position in (18b) where it refers to the continuing topic of the discourse.

Reinhart adopts Strawson's view that topics are not so much concerned

with old information, but with aboutness and relevance, that is, the topic is understood as what is of standing or current interest or concern, and what we intend to expand our knowledge about. This implies that we should not look backwards to the previous discourse (as the notion of old information suggests), but that we should attempt to define topic in terms of its effect on ongoing discourse.

### 2.3. *Topic-focus*

The notion of topic-focus articulation is central to the work of the Prague school (see Sgall, Hajičová & Panevová 1986 for an overview). Sgall, Hajičová & Panevová introduce the notion of **communicative dynamism**. Communicative dynamism is the **deep** word order rendered by the left-right order of the nodes of the **tectogrammatical representation**. The tectogrammatical representation is the underlying representation of the meaning of a sentence, which may in some ways be viewed as similar to the deep structure of generative semantics. In this tectogrammatical representation, topics are less dynamic and go to the left, whereas focus is more dynamic, and goes to the right. The left-right order in the tectogrammatical representation may or may not correspond with word order and syntactic structure in a language like English. There is full correspondence in examples like (19a), but not in the case of (19b):

- (19) a. Tom CRIED  
b. TOM cried

(19a) is about Tom, and provides the new information that he cried. Thus the subject is the topic, and the predicate is the focus of the sentence, and they appear in this order in both the surface syntactic structure, and the tectogrammatical representation. In (19b) however, the predicate provides the topic, and Tom is the new information, i.e. the focus of the sentence. Although the surface syntactic word order of the two sentences is the same, their tectogrammatical representation is different.

In the tectogrammatical representation, there is a clearcut boundary between topic and focus. There is an item *A* such that every item which is less dynamic than *A* belongs to the topic, whereas every element which is more dynamic belongs to the focus. Sentences can be topicless (i.e. purely presentational, such as *thetic statements*), but not focusless. That is, the sentence always needs to contain at least some new information, in order to make a relevant contribution to the discourse.

In a language like English, word order is to a considerable degree dependent on **surface rules**, so communicative dynamism cannot usually be read off the syntactic tree. Instead, we need to appeal to intonation, as

is obvious from examples like (19). In a language like Czech, which has a relatively free word order, word order is to a large extent determined directly by communicative dynamism. Compare:

- (20) a. Jeden voják poslal jednomu děvčeti DOPIS  
           a soldier sent a girl a letter  
       b. Poslal jeden voják jednomu děvčeti DOPIS  
           sent a soldier a girl a letter  
       c. Jeden voják jednomu děvčeti poslal DOPIS  
           a soldier a girl sent a letter

All of these sentences are grammatical, but they each have their own topic-focus articulation. The examples in (20) illustrate the claim that there is a scale of communicative dynamism on which the constituents of the sentence are located. (20a) is the variant corresponding to the primary reading of the English sentence, whereas (20b) starts with the verb as the element carrying the lowest degree of communicative dynamism. In (20c) not only the actor, but also the addressee carries a lower degree of communicative dynamism than the verb. The fact that topic-focus articulation is directly reflected in the surface word order makes Czech a clear case of a language which encodes information structure in the grammar.

## 2.4. *Focus-background*

Throughout the previous sections, the term **focus** kept coming up in relation to the other notions being discussed. However, we need to be cautious, because not everyone has the same ideas about what focus is. In phonology, the term **focus** is often used for intonational prominence. That is, any constituent which bears pitch accent is said to be a focus. Although in general, (part of) the focus is marked by prosodic prominence, not every accented constituent is a focus in the informational sense. In particular, accented constituents may also be topics (especially contrastive topics). This is illustrated in one of Steedman's (1991) examples:

- (21) Q: I know that Mary's FIRST degree is in PHYSICS. But what is the subject of her DOCTORATE?  
       A: Mary's DOCTORATE is in CHEMISTRY

Jackendoff (1972) distinguishes between *A* accent and *B* accent, where only the *A* accent correlates with focus in the informational sense. *Doctorate* in the answer of (21) carries a *B* accent.

In artificial intelligence circles, the term *focus* is sometimes used for what is **active** or **salient** in the discourse. Usually, this has to do with referential status: a ranking in salience plays an important role in anaphora resolution



(see work by Grosz, Sidner, and others working in centering theory).

In this article, we will be concerned neither with the phonological, nor with the artificial intelligence use of the term **focus**. The way in which we will define the notion of focus here is in the sense of providing new information. Vallduví (1993) calls this **informational focus**. The counterpart of focus in the old/new distinction is labelled **presupposition, frame, ground, background or open proposition**. This notion of focus is really about the augmentation or modification to be made to the common ground, that is, the update potential of a sentence in a particular context, the contribution it makes to the discourse. The (back)ground is then what is already established in the discourse, the information which is shared by speaker and hearer. The background connects the new information to the right location in the information structure built up by the previous discourse. Quite intuitively, this means treating the background as an open proposition, that is, a proposition which contains a free variable. The focus then fixes a particular value for this variable. Sophisticated versions of this idea underlie both von Stechow's (1991) structured meaning approach, and Rooth's (1985) alternative semantics.

The old/new information distinction is a relational notion, which is independent of referentiality, as Reinhart (1982) points out with respect to examples like (22):

- (22) Q: Who did Felix praise?  
A: Felix praised HIMSELF

Here *Felix* is specified by the question as the topic expression, and *himself*, as the relevant informative part of the answer is the focus. However, the referent of the two expressions is the same, namely *Felix*. Not only are discourse-old referents not always topics, as the example in (22) shows, but neither are topics always discourse-old, as we saw in the examples (15) and (16) and in Vallduví's (1990) example below with the topic *crack* that is not discourse-old either:

- (23) I can't find broccoli anywhere. Crack they sell at every corner,  
but broccoli it's like they don't grow it anymore.

Thus, neither topic nor focus can be appropriately defined in terms of referentiality.

## 2.5. Information structuring primitives

Now that we have some idea as to how all these notions are used in the literature, the question arises whether we need them all, or whether some



or all of these distinctions can be collapsed into one general contrast, say the distinction between "old" and "new" information.

As a start, we can simplify the situation a bit by collapsing the theme-rheme and the topic-comment distinction into one: the theme or topic gives us what we are talking about, and the rheme or comment tells us what we are saying about the theme. We have noticed that an important difference between Halliday's theme and Reinhart's topic concerns the status of these notions in linguistic theory. In Halliday's view, the theme is the left-most constituent of the sentence, whereas for Reinhart the topic is defined in terms of pragmatic aboutness. In Vallduví (1990) topics are called **links** and argued to point to a specific file card in the hearer's knowledge-store, where the new information of the sentence (the focus) has to be stored. In Vallduví (1990) the additional assumption is made that links should in principle be sentence-initial. Clearly, not all sentence-initial elements have to be links, and besides, sentences may have more than one link (when the new information has to be entered under different addresses) in which case only one can be sentence-initial. Moreover, in Vallduví (1993), it is argued that whereas in a language like Catalan links are structurally identified by their left-adjoined position, in a language like English links can remain in situ in which case they receive a particular pitch accent.

Quite interestingly, Vallduví's examples of left-adjoined links in Catalan seem to involve shifted topics, rather than continuing topics. For one thing, continuing topics are often realized as pronouns. In Catalan, pronominal subjects can be null, and pronominal complements of the verb appear as clitics attached to the verb. They are thus inside the core IP. This fits in with Herring's (1990) observation that shifted topics are cross-linguistically realized in sentence-initial position, whereas the position of continuing topics is dependent on the basic word order of the language. Vallduví (1993) claims that weak pronominal forms have nothing to do with information structure. Independent requirements of grammar require these pronominals. That is, the answer in (24) is informationally equivalent to the answer in (25) in that both are all-focus structures (the Catalan equivalent of the answer in (24) would have a null subject and a clitic object):

- (24) Q: How does Susan feel about beer?  
 A: [<sub>F</sub>She LOVES it]
- (25) Q: What drink does Susan love?  
 A: [<sub>F</sub>BEER]

The answer in (24) cannot simply be *LOVES* (whereas in (25) it can simply be *BEER*) since English grammar does not allow such a construction. From an informational point of view, the two examples are equivalent in that no link (shifted topic) is needed, in Vallduví's framework because the new

information must be recorded under the address the hearer is currently at.

Yet, if we want to generalize over both kinds of topic, and not limit ourselves to shifted topics, we can use the pragmatic definition of topic in terms of aboutness. Aboutness characterizes both shifted and continuing topics.

The next question is whether we can collapse the topic-comment and the focus-background distinction into one. In fact, the analysis developed by the Prague school is the prime example of a theory which divides a sentence into two parts: a topic and a focus part. On the other hand, the notion of communicative dynamism opens up a scale of possibilities, so maybe it is not quite just a bipartition after all.

As far as the other authors whose work we discussed are concerned, we noticed that both Halliday and Reinhart appeal to a notion of new information or focus aside from the distinctions they were interested in. They clearly suggest that these involve different functions, which should not be confused. Other authors support this view, and provide several additional arguments in its favor. Partee (1991) suggests that both topic and focus are **local**. That is, a topic must be a constituent, whereas comment need not be. Similarly, focus must be a constituent or a list of constituents, whereas background need not be. She also argues that felicity conditions differ: in the case of topic-comment, they include the requirement that the topic is established as such in the discourse, while both comment and focus involve the notion of relevant alternatives.

Vallduví (1990) provides further arguments against the claim that topic-comment and focus-background can be collapsed. His main point is that both kinds of divisions are incomplete in their empirical coverage. That is, the topic-comment approach fails to account for what the focus-background approach takes care of and vice versa. Both (26b) and (c) are possible answers to the question in (26a), and the focus-background partition accounts for the distinction between the focus *a shirt* and the background *Mary gave something to Harry*:

- (26) a. What did Mary give to Harry?  
       b. Mary gave [a shirt]<sub>F</sub> to Harry  
       c. To Harry Mary gave [a shirt]<sub>F</sub>

However, the focus-background distinction has nothing to say about the extra informational value contributed by the topicalization of the indirect object in (26c). The focus-background distinction by itself is not enough, we need a notion of topicalization to distinguish between (26b) and (26c). The topic-comment partition on the other hand, is unable to explain the difference between (27a) and (b):

- (27) a. [Mary]<sub>T</sub>[gave a SHIRT to Harry]<sub>C</sub>  
 b. [Mary]<sub>T</sub>[gave a shirt to HARRY]<sub>C</sub>

The intonational contrast between (27b), where *to Harry* is part of the comment, but not in focus, and (27a), where *to Harry* is the new information, is reflected by the focus-background partition, but not by the topic-comment distinction. The conclusion must be that we need both articulations to have access to the full information structure of a sentence (cf. Dahl 1974).

However, the data in (26) and (27) also suggest that the two distinctions partially overlap. This confirms the idea that topics will usually be part of the background, because what we are talking about is usually (though not necessarily) old information. On the other hand, not all old information is topicalized, so topic can also just be part of the background, with other information being backgrounded but not topicalized. This leads Vallduví to adopt a hierarchical information structure, in which the sentence is divided into a background and a focus. The background is further split into a **link** and a **tail**. The link is what others would call the topic, as we noted above. The tail is the non-topic, non-focus part of the sentence.

This tripartition is reflected in the syntactic structure of Catalan, which Vallduví uses to support his analysis. The general information structure of the Catalan sentence in Vallduví's view is:

- (28) [<sub>IP</sub> link [<sub>IP</sub> focus] tail]]

The structure allows for four possible informational structures, illustrated in English and Catalan in (29) to (32) respectively: link-focus (compare topic-comment), all-focus, link-focus-tail, and focus-tail (the latter two correspond to focus-background sentences; they have also been referred to as **narrow** or **constituent** or **contrastive** focus sentences):

- (29) a. The boss CALLED  
 b. L'amo [<sub>F</sub> ha TRUCAT]  
 (30) a. The BOSS called  
 b. [Ha trucat l'AMO]<sub>F</sub>  
 (31) a. The boss HATES broccoli  
 b. L'amo l'ODIA, el bròquil  
 (32) a. (I can't believe this! The boss is going crazy!)  
 BROCCOLI, she wants now  
 b. BRÒQUIL, vol ara

In a given Catalan sentence all and only the overt non-clitic material in the core IP-slot is focus. Intonational focus falls on the rightmost element of the core IP. Left-adjoined phrases are links, right-adjoined phrases are tails. Compare the following examples:



- (33) a. Fiquem el ganivet al CALAIX  
           I.put the knife in.the drawer  
       b. \*Fiquem el GANIVET  $t_i$ , al calaix<sub>i</sub>  
       c. Hi fiquem el GANIVET  $t_i$ , al calaix<sub>i</sub>  
       d. \*Hi fiquem el ganivet al CALAIX<sub>i</sub>

(33b) shows that a clitic is obligatory if the argument has moved to an adjoined position, whereas the ungrammaticality of (33d) is due to a co-occurrence of a clitic and a coindexed argument in the core IP. Thus, in Vallduví's analysis, Catalan strictly encodes a tripartite information structure, with specific positions for the constituent we are talking about, other background information, and the focussed part of the sentence.

A potential counterexample to Vallduví's uniform structure in (28) concerns **focus-preposing** constructions, such as the one in (34a):

- (34) a. El GANIVET<sub>i</sub>, vaig ficar  $t_i$  al calaix de dalt  
           the KNIFE I put in.the top drawer  
       b. El ganivet<sub>i</sub> el<sub>i</sub> vaig ficar  $t_i$  al calaix de DALT

Differences between a focus-preposing construction as in (34a) and a link-preposing construction as in (34b) are that the intonational prominence in (34a) is not at the end of the sentence, but on the preposed phrase, and that while the argument position is empty in (34a) there is no clitic attached to the verb to bind that position (a clitic is not possible here). Therefore, Vallduví concludes that focus-preposing does not compare to left-adjunction and in order to make focus-preposing constructions compatible with (28), he has to argue that focus-preposing is right-adjunction after all, that will take place whenever the verb is part of the ground (usually, since the core IP is focus, the focus material will always contain the verb) and only the subject NP or the object NP is in focus.

This analysis cannot serve in the case of English focus-preposing constructions, in which the focal element receives a focal accent in a topic position instead of in situ. Focus-preposing constructions have been used in the literature as evidence for an abstract rule of focus-preposing for all focused elements (cf. Rochemont 1986). Consider the focus-preposing construction in (35c) (cf. Prince 1981):

- (35) a. They bought a dog  
       b. They named it Fido  
       c. Fido they named it

Both (35b) and (35c) are appropriate continuations of (35a). The difference in informational status is that *they* is the topic, and the name of the dog is focused in an unmarked position in (35b), whereas it is a preposed focus in (35c). Ward (1985) and Vallduví (1990) argue that (35b) and (35c) are in



fact not informationally equivalent and that a preposed focus has topic-like properties, in the sense that there needs to be a certain presupposed set or scale we are talking about. It is just the specific value on the scale or the element in the set that provides the new information. A preposed focus is thus close in some sense to a contrastive topic (recall Krifka's example, given in (15)): both involve a special mixture of old and new information.

### 3. *Current issues: interfaces*

#### 3.1. *Association with focus: semantics or pragmatics?*

The notion of focus-background as old/new information is relevant for both pragmatics and semantics. Pragmatic effects of focus we have already encountered in the well-known question-answer pairs (as in (1) and (2) above). Other examples of so-called **bare** focus (that is, focus effects which do not involve operators) concern conversational implicatures, as in (36), borrowed from Rooth (1992). The setting here is that Mats, Steve and Paul took a calculus test. After the grading, George asks Mats how it went. One and the same sentence, uttered with different intonation patterns, provides different answers to the question:

- (36) Q: How did it go?  
 a. Well, I passed  
 b. Well, I [passed]<sub>F</sub>  
 c. Well, [I]<sub>F</sub> passed

Uttered with a default intonation contour, and no particular prominence on any constituent, as in (36a), Mats's answer provides a neutral description of the situation, with no specific meaning effects related to focus. However, if the VP is marked as being the focus of the sentence, as in (36b), Mats suggests that he did no better than passing. In answering with (36c), Mats suggests that Steve and Paul did not pass. The difference is one of conversational implicatures rather than truth conditions. The reasoning behind this goes as follows. The Gricean maxim of quality and quantity tells us to use the strongest statement we have adequate evidence for. If Mats uses *pass* in (36b) instead of a stronger expression like *ace*, then there is a conversational implicature that Mats did not ace. Similarly for (36c): Mats does not claim that any of the other people passed, which conversationally implies that they did not. Note that these pragmatic effects only arise with narrow focus on one of the constituents, as in (36b) and (36c), and not when the sentence as a whole presents new information, as in (36a).

Other pragmatic meaning effects of focus come out in contexts where an operator is used that is sensitive to information structure, such as negation:

- (37) a. John did not introduce Bill to [Sue]<sub>F</sub>  
 b. John did not introduce [Bill]<sub>F</sub> to Sue

The two sentences have the same propositional content, and are true in the same models. Yet, (37a) seems to indicate that John introduced someone else than Bill to Sue, whereas (37b) suggests that John introduced Bill to someone else. The explanation is that the semantic scope of negation is the entire proposition, but its pragmatic scope is the part of the sentence that is in focus. The part of the sentence which is not in focus constitutes the background. This information is presupposed to be true, and it is outside the (pragmatic) scope of negation. This is what makes the felicity conditions of the two sentences entirely different, even though their truth conditions are identical (Horn 1989, pp. 504–518).

As expected, English marks the pragmatic scope of negation phonologically. Languages which encode focus-background in the syntax will have different syntactic structures corresponding with the pragmatic scope of negation. In Section 1 above, we noticed that, in Hungarian, a constituent modified by negation must occupy the *F* position in the syntactic structure (compare (6)–(7) above). Similar observations are made for Mayan languages in Aissen (1992). Remember that Aissen assumes that these languages are basically VOS, and have a VP-internal subject. In Tzotzil, an NP moved to SpecIP is in focus, and an NP adjoined to CP is an external topic. According to Aissen, focus is exhaustive: the focussed constituent denotes an entity which satisfies the variable of the open proposition, and furthermore that entity is the only one in the current discourse which satisfies it. The situation in Mayan languages is then parallel to what Szabolcsi and Kiss observe with respect to Hungarian. Negation adjoins to IP and thus occurs naturally to the right of the topic (38), and to the left of the focus (39):

- (38) a. Pero li vo'on-e mu xixanav  
 But DET I-ENC NEG I.walk  
 'But me, I don't walk'  
 b. \*Mu (a) li vo'on-e xixanav  
 NEG (TOP) DET I-ENC I.walk
- (39) Mu chobtik-uk tztz'un  
 NEG corn-uk he.plants  
 'It wasn't corn that he was planting'

How do we know that the subject is in topic position in (38) and *corn* is in focus in (39)? Remember that topics, but not foci in Tzotzil are usually preceded by the particle *a*. They are almost always marked with the

definite determiner (*li* in (38a)), and they are always closed by an enclitic *-e* (*vo'on-e* in (38a)). The example in (38a) shows that the topic NP is not affected by negation. The NP cannot be negated by moving negation to the left of the topic, as shown by (38b). Because topics define what the sentence is about, they escape the scope of negation. Only NPs in focus, as in (39) are under the scope of negation, and negation has to precede the focus. Aissen adds that *-uk* attaches to nonverbal elements to delimit the scope of negation. This can be viewed as another instance of (narrow) focus being marked morphologically. Aissen provides similar data for Tz'utujil. Mayan languages thus use a mixture of syntactic structure and morphological markers to express information structure.

Jackendoff (1972) was probably the first to point out that focus sensitive operators can have semantic, i.e. truth-conditional effects. An example is the kind of meaning effects *only* gives rise to in contexts like (40) (from Rooth, 1985):

- (40) a. Mary only introduced Bill to [Sue]<sub>F</sub>  
       b. Mary only introduced [Bill]<sub>F</sub> to Sue

In a situation such that Mary introduced Bill to Sue and Jane and there were no other introductions, (40a) will be false, but (40b) true. Adverbs like *only* are said to associate with focus, in the sense that the focus determines the domain of quantification. So *only* in (40a) quantifies over the set of people which Mary could have introduced Bill to. Data like these suggest that association with focus is a truly semantic phenomenon. If the truth conditions of sentences involving adverbs like *only* are crucially dependent on information structure, this raises fundamental questions about the relations between syntax, phonology, and semantics. We need a grammatical theory in which both syntactic structure and phonological information can be input to the semantic component. In many analyses of focus sensitive operators, this question is circumvented by assuming that focus translates as a syntactic feature on certain constituents. In fact, this convention is already adopted in the examples given so far. Given that there is no one-to-one relation between pitch accent and focus, the introduction of a syntactic feature may be the best we can do.

More in general, however, the idea that association with focus is a semantic phenomenon has been challenged. Some authors claim that it is more appropriately characterized as a pragmatic phenomenon (in particular, Blok 1993 and Vallduví 1990). Rooth (1992) hesitates between what he calls a strong and an intermediate position. His strong theory of alternative semantics implies that no lexical or construction-specific stipulation of a focus-related effect in association with focus constructions is available. This version of the theory would indeed claim that focus effects are always



optional. The intermediate position is that, if there is no competing motivation for focus, association with focus is virtually obligatory for adverbs like *only*. The idea would be that focus needs to be interpreted one way or another, and in the absence of some other antecedent for the focus variable, *only* is the most likely candidate. This point of view suggests that there is at least a weak correlation between intonational prominence and semantic interpretation. (See for recent discussion in the literature on the interactions between quantification, topic, focus and context, among others, de Swart 1991; Johnston 1994; von Stechow 1994; Partee 1995; Geilfuss 1995; Eckardt 1996; de Hoop and Solà 1996; Herburger 1997.) More in general, this raises the issue about the relation between intonational prominence and syntactic focus features, in other words, about the correlation between stress and focus.

### 3.2. Stress and focus

In Cinque (1993) the hypothesis is explored that the (unmarked) pattern of phrase and sentence stress can be entirely determined on the basis of surface syntactic constituent structure. Within such a view, one must distinguish the formal sentence grammar procedure that determines where the prominence of a phrase will be located (basically, the most embedded constituent) from the informational procedure that determines the prominence of the phrase in focus, relatively, over that of the background. As Cinque points out, the well-known ambiguity in focus of a sentence like (41) (cf. Chomsky 1970) where any of the phrases indicated can be the focus (as will be clear by the possible answers in (42)) is a consequence of the interplay of the two procedures. That is, the most prominent stress of a phrase will be located by the formal procedure on the most deeply embedded constituent, i.e. *shirt*, but in fact, *shirt* is the most embedded constituent of all the phrases indicated in (41), each one potentially qualifying as the informational focus therefore.

- (41) Was he [warned [to look out for [an ex-convict [with a red [SHIRT]]]]]]?
- (42) a. No, he was warned to look out for an ex-convict with a red [TIE]  
 b. No, he was warned to look out for an ex-convict [with a CARNA-TION]  
 c. No, he was warned to look out for [an AUTOMOBILE salesman]  
 d. No, he was warned [to expect a visit from the FBI]  
 e. No, he was [simply told to be more CAUTIOUS]



That two different procedures should be distinguished has often been challenged in the literature on topic and focus, since it is not always obvious that one can distinguish **unmarked** and **marked** intonation patterns. In that view, focus cannot be assigned independently of the information structure of the sentence, sentence stress being the reflection of an independently determined information structure. Yet, Cinque (1993) and Reinhart (1995) provide substantive support for Cinque's approach. Cinque discusses the following English-Italian paradigm:

- (43) a. Truman DIED  
b. JOHNSON died
- (44) a. Truman è MORTO  
b. È morto JOHNSON  
c. #JOHNSON è morto

The pair in (43) is from Schmerling (1976) who recalls that at the time (43a) was uttered, Truman had been in the news for some time because of his ill health; Johnson, instead, died somewhat unexpectedly. In other words, Truman is the topic of (43a), but (43b) is a topic-less, all-focus sentence. The question then is why stress on the verb could not have served as the unmarked stress pattern in (43b) too. Cinque argues that the unmarked stress pattern would give rise to an interpretation in which the subject is considered the topic of the sentence, as in (43a). The only way to avoid this unwanted interpretation is by marking the least predictable element in the event as focus. At least, that is the case for English. In Italian, there is an option of leaving the subject in situ (44b). If the subject is raised (44a) unmarked focus will fall on the verb as the most embedded constituent and we get the topic-focus interpretation. But in (44b) the unmarked focus falls on the subject and we get the topic-less interpretation without marked stress. Using marked stress is costly and uneconomical, and it should be done for one reason only, namely when there is no other way to express the intended information structure. The fact that such a way does exist in Italian makes (44c) inappropriate. The distinction between marked and unmarked stress also accounts for the paradigm in (36). There is no strong phonological contrast between the neutral description in (36a) and the narrow focus construction in (36b). We will only interpret the sentence as giving rise to the implicature that Mats did not ace if we have reason to take the stress on the verb as marked, rather than unmarked.

Reinhart argues as follows. At the interface, sentences must be fit to the context and purpose of use. One of the means relating sentences to discourse is focus. The grammar should provide us with sufficient means to identify the focus. Pursuing the line proposed by Cinque, each derivation is

associated with a set of possible foci. At the interface, one member of the focus set is selected as the actual focus of the sentence. At this stage, it is up to pragmatic conditions rather than syntax to determine whether a derivation with a given focus is appropriate in a given context. Any stress pattern other than that determined by the structure and the formal stress rule is considered marked. A marked operation is allowed only if in a certain context *C*, a sequence that is not in the unmarked focus set is the only one which can make the derivation usable in *C*. Such contexts have in common that the constituent on which unmarked focus would have fallen needs to be excluded from the focus sequence. That is, the examples often involve what has been called **narrow, constituent, or contrastive** focus, or Vallduví's **tail**-containing examples.

As a case-study of this concept of focus and markedness, Reinhart examines object scrambling in Dutch. In Dutch, a scrambled object is not in a position to be assigned default stress. Hence, it can be used only if it is appropriate for the object to be fully destressed. Topics or anaphoric expressions are typically destressed and that is how Reinhart accounts for the well-known definiteness effects of scrambling. Contrary to what Reinhart suggests, however, it appears that what is described as a marked focus pattern can easily overrule the unmarked focus pattern, despite the existence of two possible word orders in Dutch (cf. Zwart 1995; Choi 1996; de Hoop 1997). There may be languages where the relation between information structure and syntactic structure is rather strict, such as proposed for Catalan (Vallduví 1990) and Italian (Pinto 1997). In Dutch, however, this relation appears to be more flexible and in fact weaker than the relation between information structure and accentuation. The latter seems to be quite robust in Dutch (Terken & Nooteboom 1987), although even this interdependence is not as rigid as one might think (Van Donselaar 1995).

### *Acknowledgments*

We would like to thank the participants in our seminars on topic and focus in Groningen (Fall '94), Tilburg (Winter '95), and Stanford (Winter '95) for inspiring discussions. The second author gratefully acknowledges the Netherlands Organization for Scientific Research (grant 300-75-020).

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